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SAFETY DIGEST

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AMC Pamphlet **AMCP 385 -87**

GENERAL BESSON PRESENTS AMC FY 1968 SAFETY AWARDS

At a ceremony at the AMC Board, Aberdeen Proving Grounds, General Besson presented the AMC FY 1968 Safety Awards to the Commanding Generals of the major subordinate commands.

General Besson is shown presenting General Hurlbut, U. S. Army Weapons Command, the AMC Award of Honor for the best command safety program.

General Latta, U. S. Army Electronics Command is shown accepting the AMC Award of Merit.

GENERAL BESSON PRESENTS AMC FY 1968 SAFETY AWARDS

General Lollis, U. S. Army Tank-Automotive Command is shown accepting the AMC Award of Merit.

General Eifler, U. S. Army Missile Command is shown accepting the AMC Commendation for Safety.

General Graham, representing General White, U.S. Army Munitions Command is shown accepting the AMC Commendation for Safety.

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HEADQUARTERS
UNITED STATES ARMY MATERIEL COMMAND
WASHINGTON, D.C. 20315

AMC Pamphlet 385-87 January 1969

The Safety Digest is an AMC Pamphlet prepared by the Safety Office Headquarters, U. S. Army Materiel Command. Its purpose is to disseminate information which can materially influence and improve safety programs at all Command establishments.

Articles are included to supplement technical knowledge as well as practical knowledge gained through experience. They provide a basis for the further refinement of safety measures already incorporated in operating procedures and process layout. To achieve maximum effectiveness, the Safety Digest should be given widespread circulation at each AMC establishment.

Articles appearing in the Safety Digest are unclassified and are not copyrighted. They may be reproduced as desired in order to bring pertinent accident prevention information to the attention of all employees. The Army Materiel Command Safety Digest should be given a credit line when articles are extracted.

Unclassified material believed to be of interest or benefit to other establishments is welcome for publication in the Safety Digest. Please send articles for review to: U. S. Army Materiel Command Field Safety Agency, Charlestown, Indiana. If possible, include pictures, charts, drawings, and illustrations that clarify and heighten interest in your presentation.

(*AMCSF)

*FOR THE COMMANDER:

CLARENCE J. LANG
Major General, USA
Chief of Staff

OFFICIAL:

WM. A. GREGORY
Colonel, GS
Chief, Administrative Office

Special Distribution

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AMC WINS NATIONAL SAFETY COUNCIL AWARD OF HONOR FOR THE SECOND CONSECUTIVE YEAR

☛The National Safety Council has advised this Headquarters that the Army Materiel Command has earned the NSC Award of Honor for its FY 1968 safety program. This is the second consecutive year and the fifth time in six years that NSC has honored this Command with its highest award. AMC also received the NSC Award of Merit for FY 1966.

In recognition of support of this accomplishment, the following commands, installations, and activities have been nominated by this Headquarters for the listed NSC safety awards. AMC personnel are congratulated for their continued support of the AMC safety program.

Award of Honor

U.S. Army Weapons Command
U.S. Army Coating and Chemical Laboratory
Charleston Army Depot
Frankford Arsenal
Rock Island Arsenal
Thiokol Chemical Corporation, Huntsville Division
Jefferson Proving Ground
Procurement and Production Directorate, U.S. Army Electronics Command
U.S. Army Electronics Command
U.S. Army Tank-Automotive Command
Lima Army Modification Center

Award of Merit

U.S. Army Satellite Communications Agency
Tobyhanna Army Depot
New Cumberland Army Depot
U.S. Army Logistics Management Center
U.S. Army Management Engineering Training Agency
U.S. Army Cincinnati Procurement Agency
Navajo Army Depot
Fort Wingate Army Depot
Watervliet Arsenal
Research and Development Directorate, U.S. Army Electronics Command

Award of Merit (cont.)

Rohm and Haas Company, Redstone Arsenal
Research Division
Headquarters, U.S. Army Missile Command
Lone Star Army Ammunition Plant
Radford Army Ammunition Plant
Newport Army Ammunition Plant
Badger Army Ammunition Plant
U.S. Army Aviation Materiel Laboratories
White Sands Missile Range
U.S. Army Artillery Board
Aberdeen Proving Ground

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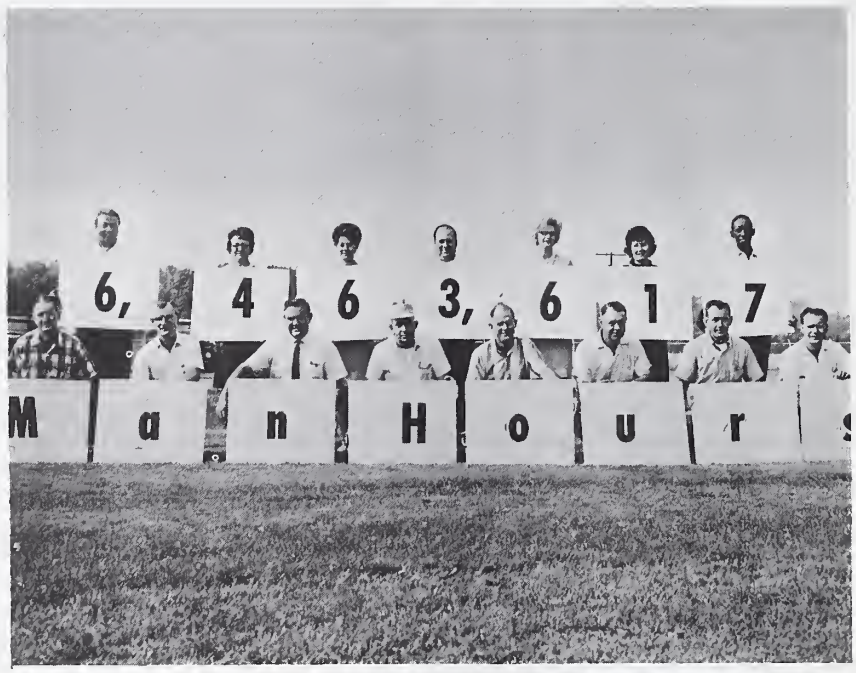
NEW SAFETY RECORD SET AT MILAN ARMY AMMUNITION PLANT



Early in FY 1969 the Milan Army Ammunition Plant, operated by Harvey Aluminum Sales, Inc., exceeded all safety records established at the plant since production began on September 15, 1941. Its personnel worked 6,463,617 man-hours without a disabling injury. This exceeded an earlier record of 6,201,314 man-hours that ended on May 23, 1955, when the plant was operated by the Proctor and Gamble Defense Corporation. In the photo above, the members of the installation's Central Safety, Health and Welfare Committee display the man-hours that exceeded all earlier safety records at Milan Army Ammunition Plant.

ALCOHOL AND HIGHWAY SAFETY

■ The Department of Transportation has reported to Congress on the role of alcohol in traffic accidents. The federal study was called for under the Highway Safety Act of 1966. Much of the work in the 182-page study represents the personal effort of Dr. William Haddon, Jr., Director of the DOT's National Highway Safety Bureau. Dr. Haddon is recognized as an authority on the relationship of alcohol and motor vehicle accidents.

The study describes the massive dimensions of the problem, noting that "the use of alcohol by drivers and pedestrians leads to some 25,000 deaths and a total of at least 800,000 crashes in the United States each year." It examines various countermeasures and lists what can best be described as gaps in the public's understanding of the alcohol problem. The document draws heavily on past research. It incorporates a small amount of information available from recent NHSB-sponsored studies.

● The study contains these findings:

1. More than half of adults use the highways at least occasionally after drinking. "However, the scientific evidence is irrefutable that the problem is primarily one of persons, predominantly men, who have been drinking heavily..."

2. Alcoholics and other problem drinkers, while constituting a small minority of the general population, account for a very large part of the accident problem.

3. In the past 35 years, in every area of the nation, alcohol has been found to be "the largest single factor leading to fatal crashes." For example, almost half of the drivers in fatal crashes of all types have been found to have blood alcohol concentrations of .10 by weight or more. In single vehicle crashes, up to 57 per cent of all drivers killed had a blood alcohol content of that level. At any given moment among all drivers using the nation's streets and highways only one to four per cent would test out to having a blood alcohol content of .10 or more.

4. The probability of being involved in a crash of any type is six to seven times greater if a driver's blood alcohol is .10, and 25 times greater if it reaches .15. (As of July 31, 1968, 29 states and the District of Columbia set the presumptive limit -- or legal definition of intoxication -- at .15, with 13 states having a .10 limit, and one state, Utah, a .08 limit. Seven states have no limit. Researchers report to reach the .10 limit a 150-pound person would have to consume in one hour $7\frac{1}{2}$ ounces of 80-proof liquor, one to two hours after a meal. One finding in the report is that legal limits throughout the country are "extremely liberal -- favoring the heavy drinker who constitutes the bulk of the problem.")

5. Most crashes involving alcohol occur in late afternoon, evening and nighttime hours. The worst day of the week is Saturday.

6. The behavior of many drivers, including very heavy drinkers, begins to be adversely affected by blood alcohol concentrations considerably lower than those at which they outwardly appear to be mildly affected or intoxicated.

7. Drinking drivers who get into trouble commonly have histories of arrest, social and medical problems related to alcohol, alcoholic parents, and marital problems. The bulk of them are males between the ages of 20 and 60.

In recent years there has been considerable attention called to alcohol as a highway accident factor. It is in the realm of taking meaningful counteraction where most experts and the authors of the report see the primary task. What can be done about the alcohol problem? For one thing, the authors say it must be understood.

The report says citizens and policy-makers should be aware that a substantial proportion of adult pedestrians hit by vehicles are intoxicated, that a large and disproportionate amount of the total problem involves alcoholics and other deviant individuals whose behavior on the roads is only one aspect of their overall behavior, and that there is a correlation between heavy drinking and law violations. It declares "there has been relatively little scientific research on this problem," and "many of the most important questions have yet to be studied."

● The report makes a few specific recommendations, including:

1. Emphasize remedial actions where the problem is concentrated -- among those who drink excessively. The report questions any "shotgun" approach aimed at the entire driving population that drinks. Attention should be given to other special target groups such as hosts, young people and pedestrians.

2. Give more attention to state and local programs directed at the overall problem of alcoholism.

3. Attention should be given to the development of constitutionally acceptable methods for screening highway users suspected of drinking, such as is occurring in England, before they are actually arrested in connection with an accident or violation.

4. Chemical test and presumptive limit laws must be augmented with other measures since "appreciable percentages of those whose licenses have been suspended or revoked for alcohol-related offenses continue to drive."

5. Police and other preventive actions should be concentrated in the hours when the problem is most serious. There should be adequate emergency and hospital services at these times. "Many hospitals, police and emergency services are least prepared for activity at night and on weekends, the times of greatest need," the NHBS says.

The study acknowledges that many proposed countermeasures, because of a dearth of sound research, are based on common sense and informed opinion. It says there must be a greater involvement of professional disciplines and agencies to straighten out incorrect assumptions, align public thinking, and formulate meaningful remedies.

SCIENTIFIC COMMON SENSE

H. F. Bigham, Safety Engineer
Hercules Incorporated
Sunflower Army Ammunition Plant

The respective accident prevention roles of the safety professional and the members of line management are often confused and obscure. As a result the safety professional is often called upon to perform certain functions which conflict with the responsibility of other levels of management. The tenuous state tends to reduce the overall effectiveness of a safety program.

To practice scientific safety management, line supervision and safety personnel must acquire managerial insight. They must master analytical methods if they are to make contributions to the safety program and total plant production.

Many scientific approaches for solving problems of business operations exist. One such plan called Technic of Operations Review and commonly referred to as "TOR ANALYSIS" was developed by Employers Insurance of Wausau for their customer use. This plan was recently utilized by the Hercules Incorporated Safety and Training Departments of Sunflower Army Ammunition Plant to develop supervisory competence, to expose and define safety training needs and to deal with fundamental causes of recurring injuries.

Technic of Operations Review is a system designed to locate and define operational errors. Real causes, sufficiently complete and representative to serve as a practical guide, are listed on a worksheet. Using cause analysis through group discussion by personnel in possession of the facts reveals reasons why the cause existed and suitable remedy for the error. The system involves no mysteries and few highly technical conditions. Only ordinary ability and common sense are required to analyze problems or decide on preventive measures.

TOR does not place blame; it simply invites participants to contribute to a guided exploration process. "TOR ANALYSIS" will reveal - not cause for

blame - but cause for the problem.

Any situation or incident which suggests the likelihood of operational error may trigger "TOR ANALYSIS". Accidents and injuries are the easiest to see, but this system makes obvious those disrupting incidents which we blame vaguely on "lack of cooperation" or "communication failure". The incident may be great or small, but even small incidents can expose the need to deal with underlying causes. TOR sessions can help whenever a group fails to achieve its objectives, or a defined mission fails, or control data indicate that something is wrong. "TOR ANALYSIS" is especially useful when unusual incidents snowball into a major problem and the cry goes up to, "Do something."

The feature of "TOR ANALYSIS" that is of special interest to those charged with administering the safety program and sets it apart from other operational reviews is a reference section dealing with personal traits. The common tendency in accident investigation is to concentrate upon personal factors in an accident, often to the exclusion of more important considerations. Incorporating personal factors with operational and supervisional considerations aids in gaining insight into solutions of safety problems.

"TOR ANALYSIS" is by no means the "magic answer" for accident prevention. It is another tool available for safety managers to solve some of their specific problems with greater than ordinary precision. It is a step in the development of competent personnel by structuring scientific thought to replace old rule-of-thumb methods. It is a beginning of an approach to safety which challenges traditional methods.

Regardless of the degree of success of your present safety program, the application of a scientific approach such as "TOR ANALYSIS" can be a tremendous aid for supervision as well as safety personnel in need of professionalism.

GLASS PIPE FOR ACID DRAIN LINE

E. J. Faulkner, Assistant Area Supervisor
Chemical Process Department
Hercules Incorporated
Radford Army Ammunition Plant

The use of Pyrex glass pipe for gravity flow movement of pyro-spent acid has resulted in improved safety conditions and substantial cost savings at Radford Army Ammunition Plant.

One of the by-products of nitrocellulose production is large quantities of pyro-spent acid which must be conveyed from the nitrators to storage tanks. This acid, a mixture of nitric acid, sulfuric acid, and water, is moved from the nitrators to the spent acid storage tanks through Pyrex glass pipe lines by gravity flow. For many years these lines were fabricated from 10-inch heavy duty carbon steel pipe with flanged joints. These lines were most unsatisfactory for many reasons.

The spent acid, containing up to 65 per cent sulfuric acid, is very corrosive and caused rapid deterioration of the steel lines. This deterioration occurred from the inside of the pipe and sections could become paper thin or spring a leak before any exterior evidence was visible. This presented serious safety hazards, as well as extensive maintenance problems. Replacement of sections of pipe was frequently necessary and required the use of large crews with heavy equipment to handle the steel pipe. This extensive maintenance also caused the loss of much production time, idling all nitrocellulose production facilities and personnel.

During the early part of 1960, an engineering study was initiated to find a more satisfactory material for construction of these lines, and a means to generally improve the system. During the course of this study, it was determined that the size of the line could be reduced to six inches if a smooth bore pipe were used.

Several materials (e.g., steel pipe lined with glass, Teflon or Penton; stainless steel, Type 321,

Schedule 5; and Pyrex glass pipe) were considered. The glass pipe was chosen for several reasons, including resistance to acids, initial cost and maintenance costs. Then two 10-foot sections were procured for study and evaluation. These were installed in the existing steel line.

After one year of use, it was obvious that this type of pipe had many advantages over the steel lines. Maintenance problems were minimal and greatly simplified. Only two area mechanics with one wrench were needed to replace a coupling or a full 10-foot section of line. The heavy equipment, riggers and additional mechanics required for work on the steel lines were no longer needed.

Enough of the Pyrex brand "Double-Tough" beaded glass drain line and standard Pyrex drain line couplings were procured to install one spent acid line 743 feet long. Two additional lines, each about 500 feet long, were installed a few months later.

These lines have now been in use for over six years and have been most satisfactory. From a safety standpoint, the glass acid drain line offers many advantages. The minimal amount of maintenance and the small crews required reduce personnel exposure. Inspection for leaks and flaws is very simple. The material flow is visible at all times, so that line plugs or other stoppages can be spotted and corrected at once, thus avoiding hazardous spills or pressure build-up. Visual inspection, prior to breaking a joint or performing other maintenance work on or around these lines gives positive assurance that the lines are empty and safe for maintenance work.

The safety, strength, and durability of glass pipe and standard couplings were dramatically illustrated in January 1967 after the first line had been in use for over five years. The earth around one of the line supports caved in, leaving the support and its concrete foundation suspended from the line. There was no damage to the glass pipe or to any of the couplings in the area. This is clearly shown in the accompanying photographs taken at the time.

The three spent acid drain lines at Radford Army Ammunition Plant have been in constant use,

24 hours a day, for over six years. During this time, maintenance problems on these lines have been almost nonexistent, and safety of our personnel and equipment was greatly enhanced by this glass pipe.

A cave-in provided dramatic proof of the safety, strength and durability of the glass pipe line and its standard couplings. These pictures show how the support and its concrete foundation were left suspended from the line. There was no damage to the glass pipe or to any of the nearby couplings.

****

BUMP CAP PREVENTS INJURY

Her hairdo may cause a woman to wear her protective cap at a jaunty tilt, but it still retains its effectiveness. Gertrude Leary, an employee of the Granite City Depot, will confirm this. She was removing identification markings from the side of a trailer like the one shown at right. The trailer's tarpaulin bows were leaning against it, One of these slipped, fell toward Gertrude, and struck her on her bump cap. Her protective headgear saved her unscathed from what might otherwise have been a painful injury from the metal end of the bow and its sharp-edged bolts and nuts.

IN-PLACE TESTING OF HIGH EFFICIENCY RADIOLOGICAL FILTERS

Denver C. Miser
U. S. Army Nuclear Defense Laboratory

A paper given by Mr. Ernest Bloore of the U. S. Army Nuclear Defense Laboratory during the Radiation Protection Symposium sponsored by the U. S. Army Materiel Command in May 1967 pointed out the need for in-place testing of absolute filter systems. The paper stated in part that quality assurance testing of high efficiency filters does not assure a purchaser that his installed filter system will approximate the efficiency of the filters.

Following the symposium, the Health Physics Office, U. S. Army Nuclear Defense Laboratory, started work to establish a program of in-place testing of filter systems in use at this activity. By late 1967 it was determined that the Quality Assurance Directorate, Edgewood Arsenal, had equipment available to perform in-place testing of high efficiency radiological filtering systems. This equipment consisted of a photo-electric forward light-scattering type detector system and an air-operated DOP (dioctyl phthalate) generator.

The relatively simple procedure consisted of producing particles of approximately 0.3 micron diameter and measuring the particle concentrations just prior to entrance in the filtering system and again after passing through the filtering system. Twelve absolute filter systems were checked at this Laboratory by this method. Of the 12 systems checked, nine (75 per cent) failed to approximate the efficiency of the filters (99.97 per cent). The leak-rate percentage varied from 0.05 per cent to 100 per cent. In each case the failure of the filtering system was traced to improper seating of the filter, or to damaged, defective, or missing gaskets. These faults were easily corrected.

Equipment for in-place testing of filtering systems can be obtained for approximately $3,000. Where funds are not available to procure the test equipment, the services of Quality Assurance, Edgewood Arsenal, Maryland, can be requested on a reimbursable basis. To assure adequate filtration, installations and activities should test the adequacy of their installed absolute filter systems. (HQ AMC Note: The installed filter system should be tested after each filter replacement and/or modification of the filter system.)

BEWARE THESE SNOWMOBILE HAZARDS

If winters are cold and snow is plentiful in your part of the United States, there may be a snowmobile in your future. These agile little vehicles are multiplying rapidly. Sales are increasing each year, and perhaps 150,000 new units may be sold this winter.

These small crawler tractors steered by skis scoot across areas that were once impassable during winter to most individuals. They are great aids in the performance of outdoor chores, and they have a tremendous appeal to the sports minded. They are used for racing, to tow skiiers and toboggans, to transport fishermen and hunters, and for pleasure riding through scenic snow-covered areas.

Snowmobiles, like other vehicles, can be hazardous if improperly used. The National Safety Council, manufacturers, snowmobile enthusiasts, and a variety of individuals and officials have recognized and called attention to the hazards. The most important safety precautions are summarized below.

1. Read and understand the operating instructions. Then practice driving for several hours before you undertake the tricky maneuvers the vehicle can perform.

2. The little vehicle can tip easily on the rugged, slippery terrain over which you may attempt to operate it. Both the driver and the passenger must develop skills to satisfy its demands. One of these is knowing how to make a quick, safe jump when necessary.

3. It's cold out there. Consider how active you will be, how low the temperature is expected to fall and how long you may be outside. Wear appropriate clothing. Consider thermal underwear, wind resistant trousers, a sweater under your windbreaker, an insulated jumpsuit, warm boots and headgear, gloves, and goggles.

4. Tell somebody where you are going, your route, and how long you expect to be out. If something goes wrong, a search can be started and you may be found

without delay.

5. Avoid driving on frozen lakes. The danger of falling through the ice is one of the chief hazards. The vehicle may weigh 300 pounds plus its load of people.

6. Beware of collisions with other snowmobiles. You can avoid this hazard by modifying traffic rules of the road to your changed environment. Avoid cutting across another vehicle's right-of-way. Do not hot-rod. Maintain a safe interval between your vehicle and the one ahead. Make certain you can see and be seen.

7. Stay on established trails. In a very few minutes the snowmobile may travel farther than you can safely return on foot. A breakdown or an empty gas tank can pose a serious problem if you are a few miles off the beaten route.

8. Travel in pairs if practicable. The second machine may be sent for assistance or may tow a stalled machine.

9. Make certain the machine and its lights are in good working order. There should be plenty of gas in the tank. On long trips extra fuel, spare parts and snowshoes should be carried.

10. If you tow a skiier or a sled loaded with children, carry a passenger to watch them. Their voices cannot be heard over the roar of the engine. You, as the driver, will be busy watching the route ahead to avoid rocks, bushes and ditches.

11. Keep your snowmobile off the highway. Automobile drivers find the little machines hard to see even in the daylight. On a slippery highway it can be difficult for the driver to stop in time if he does see the snowmobile.

12. Keep off the railroad right-of-way. You will find it difficult to hear an approaching train over the noise of your engine. The locomotive engineer will certainly not expect to see you, and his chance of stopping in time will be very slight indeed.

13. Avoid ski trails. Skiiers and snowmobiles

do not mix well.

14. Respect the property of others. The fact that a field or forest is covered with snow does not give you a license to drive your little tractor across it.

15. Know and obey the laws that regulate operation of snowmobiles in your state.

These simple suggestions, if practiced, will make operation of your snowmobile much safer and more pleasant.

****

SAW SAFETY

The circular hand saw is one of the most useful and, at the same time, probably the most dangerous of all the woodworking tools. Records from the state of California indicate that it causes more permanent disabilities than any other machine. Serious cuts, amputation of fingers, hands, or arms, and even death are all too frequent.

Do not assign the maintenance to anyone who is not qualified or authorized to do the work. Important parts of maintenance would be filing or sharpening the blade, and repairs to the switch. When using portable electric circular saws--

1. Don't fasten the hood guard back.

2. Do not use a saw without the guide and guard in place.

3. Don't lift the guard by hand when the saw is being operated, unless the guard is designed so that it can be lifted safely. The guard shall be equipped with a handle.

4. Support the material properly before attempting a cut. Never support material across your arm, leg, or foot.

5. Do not use a saw if the switch does not work properly. The switch must be of the deadman type.

6. Do not use a saw without a show or guide.

(Continued on page 16.)

GOOD HOUSEKEEPING MAKES VEHICLE SAFER

Safety Office
Thiokol Chemical Corporation, Huntsville Division
U. S. Army Missile Command

■ Housekeeping in vehicles is important for safety as well as for the sake of appearance. Hardware left in vehicles is dangerous. Clipboards, tools, metal parts and soft drink bottles become missiles when sudden stops are made or a collision occurs.

Here are some things we may do to maintain good housekeeping in our vehicles:

1. Carry a litter bag in every vehicle.

2. Double check before dismounting to be sure we are not forgetting something we took with us when mounting the vehicle.

3. Hold waste paper and packages until they may be properly disposed of.

4. Remove tramp items that have been left in vehicles by others.

5. Clean footwear before mounting a vehicle.

6. Unload beds of trucks completely and remove debris from each load.

7. Be considerate of others and leave vehicles clean and orderly.

▶Now, here are some things we should <u>not</u> <u>do</u> in order to maintain good housekeeping:

1. Don't use vehicles as garbage disposals.

2. Don't carry soft drinks into vehicles.

3. Don't drop residue from smoking or eating on floors of vehicles.

4. Don't leave tramp items in vehicles.

5. Don't clean footwear after mounting vehicle.

6. Don't throw litter from vehicles onto roadways.

Vehicle housekeeping is important for appearance's sake, as well as for reasons of safety. Let's keep motor vehicles clean.

****

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AR 385-60, 7 November 1968
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AMCR 385-25, 12 August 1968
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Safety, Training for Army Safety Personnel.

DA Pam 385-3, August, 1968
Protective Clothing and Equipment.

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(Continued from p14.)

7. Leave the saw in the cut until the blade stops rotating.

8. The saw must be grounded by a three-prong plug in a three-way receptacle.

●--Safety Bulletin
G. F. Atkinson Co.

HINGED STEEL PLATES GUARD FEET

Safety Department
Remington Rand Office Systems Division
Sperry Rand Corporation
Louisiana Army Ammunition Plant

The protection currently being worn by Forge Area employees of the Louisiana Army Ammunition Plant's Metal Parts Manufacturing Plant, where maximum foot protection is always required due to the weight of steel billets that are handled in the area, is a standard eight-inch, steel-toed boot with a separate strap-on metal toe guard placed over the toe and instep. Though affording adequate protection, the strap-on guard is bulky, cumbersome, restricts free walking movements and employees occasionally forget to wear them. Because of these shortcomings, six pairs of eight-inch steel-toed safety boots with attached (hinged) steel plate metatarsal protection were purchased and issued to employees for service testing.

Service testing of the new boots started on 17 April 1968, and to this date results have been very satisfactory. The employees testing the boots contend that all foot movements are much easier and also quicker, if and when the need arises. Another favorable factor is that the metatarsal guard is permanently attached to the boot; therefore, it is always guarding when the boots are worn.

On two occasions, a 125-pound steel billet fell from the conveyor (a distance of 40 inches) and struck the foot of an employee wearing the test boot. In each instance no injury was experienced by the individual, and there was no visible damage to the steel plate or the boot.

In addition to the service test, one pair of boots was filled with damp sand, placed on a concrete floor, and a 125-pound steel billet held in a horizontal position was dropped 40 inches onto the steel metatarsal plates. The billet bounced forward off the boots, denting the steel plate across the center. It was apparent from the test that the steel metatarsal plates resisted the impact of the billet sufficiently to prevent serious injury to a person's foot.

In view of the favorable results of the test, action has been initiated to procure this type of boot for protection of personnel working in areas that require more than the normal steel-toed safety shoe protection.

■ A shoe with the hinged steel plate metatarsal protection (left) is shown beside one with the separate strap-on metal toe guard. The two shoes at the right are shown after a 125-pound steel billet had been dropped on them from a 40-inch height. From this test it was concluded the steel metatarsal plates would have prevented serious foot injury.

FOURTH AMC SAFETY TRAINEE CLASS IS LARGEST YET

● The U. S. Army Materiel Command Safety Management Intern Training Program, now in its fourth year, has the largest class enrolled to date. Sixteen carefully selected trainees are undergoing training at the AMC Field Safety Agency. Before this class began its period of instruction, the largest group to complete the course was ten in FY 1968.

The FY 1969 class is receiving six months of classroom instruction at the AMC Field Safety Agency. During the next three months its members will be given on-the-ground familiarity with the different types of AMC installations. They will then be transferred for three months of on-the-job training at the individual installations where they will be permanently assigned.

The trainees shown left to right in the above photo are:

○ 1st row: Raymond Ybarra, David G. Spannbauer, James W. Whalin, Edward M. Klinghoffer, and George D. Byington.

○ 2d row: Herchiel D. Shipley, Richard B. Payne, Harvey M. Haeberle, Jeffrey L. Lind, Geoffrey G. Brown.

○ 3d row: Rodney G. Prows, Stephen P. Carl, Race M. Foster, Machael G. Lenzini, Harry E. Lindler, and Earl L. Markwell.

JITTERY WORKER JUMPS

☐ A recent explosion at an Army installation had made the workers freshly aware of the destructive power of the products with which they worked. Some were nervous and alert for anything unusual.

A contractor-employed ammunition inspector was working at a desk in a melt building. Production operations were underway in nearby bays. Suddenly the normal sounds of the building underwent a change. There was a new. loud hissing noise, produced by the rupture of a steam line that serviced the melt probing equipment.

The ammunition inspector and several other workers reacted to the sound. Their first thought was that another explosion was imminent, and they rushed to evacuate the building. The inspector's exit route led down a flight of ten steps. In his haste to escape the imagined danger he cleared the space to the ground in one jump.

He landed hard and unevenly. His right ankle was fractured. He was expected to be away from work for 20 days.

The injured worker and his fellow employees were given fresh instructions on how to evacuate buildings when an emergency arose. The exercise of reasonable caution was emphasized.

IMPULSIVE ACTION CAUSES INSTANT INJURY

The young track maintenance laborer was nearing the end of his first month on the job with an Army contractor. He had received 45 minutes of training before first being taken to his worksite. Additional safety training was given on five separate workdays and he received appropriate day-to-day on-the-job instruction. His work was becoming routine.

Late in the morning on this day he was placing new ties along a section of track. A motorized handcar, pulling two small flatcars, the first loaded with tools, approached. The worker stood clear on the right side of the track. The handcars slowed to about five miles per hour as the operator made ready to stop.

The worker, watching the handcar train move up and start past him, had a sudden impulse to catch a ride. When the motor car was almost past, he jumped up on it.

The unplanned act was started too late for him to control his momentum. He was thrown off balance and went spinning toward the rear. Three passengers on the handcar were unable to react in time to catch him. He fell into the space behind the motorized car and landed on the rails in front of the tool car. An iron wheel of the loaded tool car ran over his body before the handcar train came to a full stop.

The worker received multiple back fractures and internal chest injuries. It was thought he might be away from work for six months.

The contractor took the following actions to prevent similar accidents:

✓ 1. Additional safety meetings were held and plant-wide attention was drawn to this accident.

✓ 2. All track maintenance personnel were given intensified training in the procedures and rules they were to follow.

✓ 3. A review was started of the adequacy of the training and operational procedures provided for these workers.

STEAMED GLASSES CONTRIBUTE TO FALL

It was midsummer and it was hot inside the boxcar where the Army employee was working. Boxes of ammunition had been stacked six feet high in each end of the car. Now these were being blocked and braced before the car was moved. The only open space was an aisle 30 inches wide across the center of the car.

The worker was busy nailing a 2" X 6" tie across the doorway. He was sweating and his glasses were steamed. When the time came for him to move from one side of the doorway to the other, his steamed glasses obscured his view of the aisle. He misjudged his footing and went crashing down into the 30-inch wide and six feet deep space.

He landed on his feet and in an upright position. Concern was expressed about injuries he might have received in his hard fall, and he was sent immediately to the Post Dispensary. The Post Surgeon gave a diagnosis of a possible lumbar back strain. The employee went back to work.

Sharp pain in the lumbar region of the back recurred six weeks later while the worker was helping fabricate car blocking dunnage. Again he was sent to the Post Dispensary. This time the doctor sent him home to rest for about ten days.

The following actions were taken to prevent similar accidents:

▶ 1. Conditions associated with the fall inside the boxcar were used as a topic for installation safety meetings.

▶ 2. Workers and supervisors were instructed to avoid nailing from elevated surfaces except when this was absolutely necessary.

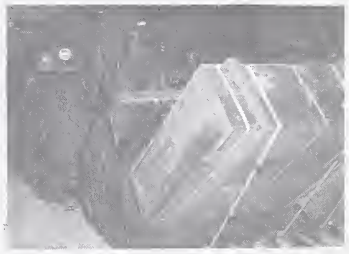
▶ 3. Workmen were required to have adequate planking to cover aisles before spanning the center space of loaded boxcars.

HYDRAULIC FAILURE LEADS TO BULGING DOOR

When two Army employees rode past a storage building, they noticed the unusual appearance of its metal door. There was a distinct bulge on one side. (See Photo 1.)

A check of the building's interior revealed the source of the bulge. A front-end loader stored in the building had moved toward the door. Its heavy counterweight had come into contact with and shoved the door surface outward. (See Photo 2.)

The loader had been stored inside the building 60 days before the accident was discovered. When it was stored, it had been left with the bucket in a raised position, containing the box shown in Photo 3. The emergency brake had been left unengaged, to prevent the lining from freezing to the drum. At some time within the 60 days the machine's hydraulic system failed and the elevated bucket fell. The force created by the falling bucket apparently caused the unbraked loader to move about two feet and strike the door. Three door panels were damaged. Estimated cost of repairs was $350.



To prevent movement of other stored machines, the installation adopted the practice of chocking the wheels.

Editor's Note: Machines that have hydraulically powered buckets or forks should be parked or stored with the bucket or fork resting on the ground or an appropriate supporting surface. Besides reducing the chance for an accident, this practice removes strain from the equipment and its hydraulic system.

HANDRAIL WAS HAZARDOUS PERCH

A contractor employee was performing dipping operations on a nitrating unit at an Army plant. A waiting step occurred between steps in the process. During one of these periods the worker went outside to rest on an elevated catwalk.

He decided to take a seat while waiting. Sitting on the top rail of the catwalk did not appear to be perfectly safe. He seated himself as comfortably as the cramped position allowed on the midrail.

The midrail proved to be both uncomfortable and unsafe. It broke under the weight of the worker. He fell backward beneath the handrail and landed on the ground 23 feet below.

The fall caused the fracture of two vertebrae and severe damage to his spinal column. At the time the accident report was prepared it was feared the man's lower extremities might be permanently paralyzed.

The broken rail was replaced. The supervisors in the area discussed the event with all their employees. They gave emphasis to the prevention of sitting on catwalk railings.

Information on the accident was disseminated by the Safety Department to all employees of the plant.

DON'T PROVIDE FUEL FOR A FIRE

The following fires occurred within a few weeks at three Army Materiel Command installations:

• 1. A worker was draining water from the bottom of a 10,000 barrel capacity fuel tank. He left the water running while he went to a building 500 yards away for a drink of water. When he returned he found fuel was coming out with the water. He closed the valve and went about his business without reporting any fuel had escaped. The spilled fuel flowed into a stream. That afternoon the contaminated stream caught fire and burned a considerable distance. The fire spread to two state highway bridges, a railroad trestle, underbrush and timber on privately-owned property, and to a privately-owned cabin and home. Estimated damage exceeded $133,000.

• 2. At 0100 hours fire was discovered in the lower level storage area of an Army quarters building. Occupants of the four apartments escaped without injury. Damage to the building was estimated at over $14,000 and to private property at $5,000. Investigation revealed that gasoline, paint and thinner had been stored in a bin in the building storage area.

• 3. The wife of a noncommissioned officer began preparations for the evening meal. She placed a broiler and a cast iron frying pan on the stove. The pan was about half filled with cooking oil. She turned the broiler element control to 500°F., pushed the start button and went outside to talk to her next door neighbor. Their conversation continued until the woman's son discovered and reported the house was on fire. Damage to Army and non-Army property exceeded $5,000. Investigation revealed that the control button for the element under the frying pan was in the "On" position. It was determined that the overheated cooking oil had ignited, and the fire had spread to other areas of the unattended kitchen.

All fires involve the classic triangle of heat, fuel and air. The distressing feature of the three fires described above, as well as for many of those

experienced by the Army Materiel Command, is the apparent carelessness in making fuel available for uncontrolled burning. It is highly unlikely that any of the individuals involved - the worker at the fuel tank, the housewife, and the unknown individual who stored gasoline and painting supplies - did not know they were dealing with flammable materials.

▷What can we do to prevent fires such as the ones described above?

Human mistakes set up the situations that make possible many of our fires. While no revolutionary breakthrough is likely to eliminate all personnel errors, prudent forethought should prevent more of these unnecessary fires. Work in three areas should be productive:

■1. Train the individuals to eliminate situations that increase the likelihood of a fire starting. Possible situations are almost limitless, but most of them can be easily identified and often corrected on the spot. Here are a few sample fire hazards:

a. Spilled fuels without efforts being made to clean them up.

b. Cooking oils and grease left unattended on hot stoves.

c. Unsafe storage of petroleum products, paints and thinners.

d. Poor housekeeping that permits accumulation of boxes, papers, oily wastes, clothes, trash and other flammable items.

e. Continued use of defective or worn electrical equipment and heating systems.

f. Unattended children allowed to have access to storage areas and fire-producing items.

■2. There should be a system of regular inspections to detect and correct fire hazard situations

Although the fireman or fire inspector will be most expert at this, he cannot be solely responsible for detecting fire hazards. Each supervisor, worker

and family member - to the extent he is capable - has a responsibility for constant fire inspections. Most people do a respectable job at this, but a more perfect performance is needed.

When fire hazards are found there should be a follow-up to make certain corrective action is completed.

Inspections should not only be seasonal, such as those during Fall and Spring. Fires occur throughout the year. Preventive inspections and corrective action should be continuous.

- 3. There should be more instructions on what action to take in the event a fire is discovered. If prevention fails, as it sometimes will, there is no time to be lost. The individual should be trained to make a safe exit from the burning area, to turn in the alarm that summons fire-fighting help, and to fight the fire as appropriate until help arrives.

● The properly motivated and alert individual can prevent many fires. He can reduce the likelihood of injury and often reduce the amount of damage if he reacts correctly when a fire does occur.

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HARRY DIAMOND LABORATORIES WINS NSC AWARD OF HONOR

Harry Diamond Laboratories have been informed that they have qualified for a NSC Award of Honor for operating 5,004,990 man-hours without a disabling injury from 18 November 1966 to 15 August 1968.

DON'T SHORTCHANGE YOURSELF BY INADEQUATE REPORTING

Although accidents and injuries are deplorable, the losses they cause can be made even worse. This may happen whenever the organization that experiences an accident fails to learn the harsh lesson the individual incident teaches. More losses can also occur when the organization fails to pass the lesson on to others who may learn from it. The cost of these after-the-fact failures can be similar accidents with additional damage and suffering.

Any accident experience should be used to obtain any available lesson that can be applied to prevent a repetition of an undesirable incident. Almost always there is a lesson to be learned.

One easy way to shortchange yourself and others on lessons to be learned is to indulge in inadequate accident reporting.

Here are samples of discrepancies that are likely to show up in Army accident reports, DA Form 285. Whenever they appear they are evidence of inadequate work by supervisors or safety personnel. Most of these shortcomings can be prevented easily.

1. Incomplete information is furnished. This weakness seems most likely to occur when both Army and non-Army property is damaged. The cost of the estimated Army and non-Army damage may be stated as "unknown". "Unknown" is an inadequate answer for an estimate of damage. The best estimate is satisfactory for evaluation purposes. When "unknown" is furnished as the answer to the estimate of damage, intermediate commands, AMC Headquarters and the Army are not being furnished the full "pictures".

2. The narrative account of the incident may be so excessively brief as to give only the faintest idea of what happened. Unless a full, clear, complete story is told, no one, including yourself a few months from now, may be able to learn much from this experience. Do not skimp on any information needed to make clear what happened. Include sketches or pictures if these will provide clarification.

3. A poorly organized narrative can be almost as confusing as a skimpy one. The reader may have the facts in front of him, but in jigsaw puzzle shape. He may assemble them incorrectly and draw the wrong conclusion.

4. Another confusing narrative is the one filled with references to "vehicle 1", "reference 1" and similar terms. These hamper understanding. If Jones and Smith are involved, use their names instead of impersonal "bafflegab" terms.

5. The words "For Official Use Only" may be stamped on a report of a commonplace accident. The result may be some unintended humor. If John Doe has a finger cut off, the accident can hardly be "For Official Use Only". Anybody, anytime who sees Joe's hand may observe the finger is missing. It is a rare accident indeed when the facts cannot be told freely.

6. Continuation sheets are sometimes omitted. The sheets are provided for data when more than one person is injured or involved in an important manner. A blank sheet of paper may be used for continuation of the narrative. (Occasionally a conscientious installation takes the opposite tack and furnishes continuation sheets for each witness and uninjured passenger. The instruction sheet for DA Form 285 makes it clear that witnesses and uninjured passengers are not considered to be "personnel involved" for reporting purposes. Appropriate information about such individuals may be included in the narrative section.)

7. Some reports are reviewed and approved at a surprisingly low supervisory level. This might suggest that limited local use is made of the lesson that may be learned. In other cases the Commander, including some general officers, insist on signing off on an accident report. These latter installations are likely to have very few accidents to report, because an all-out effort is made to conduct a top-notch safety program.

8. Incorrect accident classification by type suggests that the safety director, as the responsible technical advisor to the preparer of the report, had not done his bookwork. Most accidents can be classified easily if reference is made to the AR 385-40

definitions, and AR 385-41 codes.

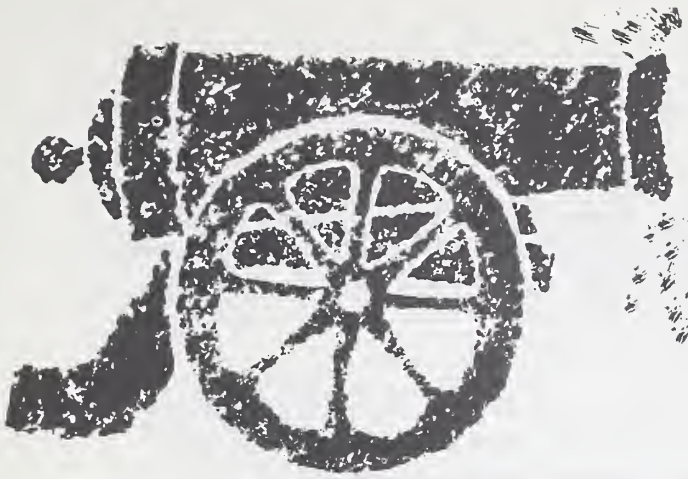
9. Some uncomplicated reports of rather simple accidents take a long time to be prepared and mailed. If the accident is investigated immediately, as it should be, there would appear to be no cause for delay in completing the report.

10. The reporting of conflicting information is puzzling to recipients of accident reports. For instance, if the Accident Report and the Fire Report give different property damage estimates, the conflicting information may cause difficulties and time-consuming correspondence. Lack of coordination among supervisors, the health unit and the safety office may cause different information to be reported on the Accident Report and Bureau of Employees' Compensation forms.

11. Then there are the simple errors that reflect apparent failure to read and follow the reporting instructions attached to the DA Form 285. You are cheating yourself if you neglect these instructions. They can make your reporting job much easier.

One final point is worth remembering before you mail your accident report. Possible shortcomings in the report are likely to be the things that make the sharpest impression on Headquarters personnel. A little additional time spent to assure the accident report is properly completed will assist all concerned to take appropriate action to prevent similar accidents.

What Happened?!!



Explosives Safety

DON'T LET FAMILIARITY BREED CONTEMPT

Upon his first close contact with a quantity of explosives or propellants the average person experiences a somewhat uneasy sensation. He feels an awareness of an immense destructive force in the substance. He proceeds cautiously and feels relieved when he leaves the scene.

The relieved worker does not realize he has probably been as safe as he may ever again be at an industrial plant. His attitude was excellent, in that he had a profound respect for the product to which he was exposed. He would not have made a move without having been told by somebody with knowledge and authority that the act was permissible and correct. He was intent on being safe.

If this same worker continues to be exposed to similar explosives or propellants a change occurs. He becomes more familiar with them. Nothing happens, and his confidence grows. Depending upon the instructions and the supervision he receives, his confidence may grow to the point of indifference and even contempt to once dreaded hazards.

He may now be a risk of the worst sort to himself, his fellow workers and the plant. At this stage he or some fellow worker of like overconfidence is a candidate for a central role in an explosives accident.

The individual whose indifference permits him to perform unsafe acts in the presence of explosives and propellants is inviting trouble. The product is impersonal and certain acts, combinations of circumstances or avoidable incidents will eventually lead to predictable situations which could result in a fire or explosion.

As always, there is no time like the present to make certain familiarity is not breeding contempt toward explosives and explosives hazards at your plant. Here are some suggestions that can assist you in this part of your work.

1. Indoctrinate the worker thoroughly before he starts to work in an explosives area. Tell him and show him to make certain he understands what will be going on about him and what the hazards are. By giving him the correct information, you can make certain he is not given misinformation by people he may contact at random.

2. Train him in the work you expect him to perform. Make him understand what he is doing and why it is done, as well as how he is to do it. Take whatever time is needed to accomplish this job. Introduce him to the Standing Operating Procedure and make certain he reads and understands it. And make certain he knows where the SOP is posted. You would not think of hiring a non-driver, training him for an hour, and then sending him to drive a 38-passenger bus through downtown city traffic. A one-hour trained explosives operator may cause a more sensational accident than a poorly trained vehicle operator driving in heavy traffic.

3. Take follow-up action after he starts on the job and correct his faulty acts.

4. Make certain the SOP is specific, clear and up-to-date. Does it do the job for which it is intended? The fact that you have published, posted and required the SOP to be read does not guarantee the desired results. It must be understood thoroughly. (See the article, "Is Your SOP Understandable?", in AMC Pamphlet 385-80, the November 1967 Safety Digest, for a description of an attractive, interesting and useful SOP.)

5. Make certain the worker possesses and uses the appropriate protective clothing whenever he is engaged in explosive activities.

6. Make certain the worker knows about personnel exposure limits and that he complies with them at all times.

7. Make certain that everything possible is done to provide him with safe equipment, tools and working environment. He can work only with that which is permitted and allowed for him.

8. Make certain he knows about the importance of good housekeeping and that he practices it at all times.

9. Give him the supervision he and the job need for the work to be accomplished correctly and safely.

All these suggestions are related to genuine respect for the explosive material being produced or handled. This respect must never be relaxed. Disrespect or contempt for it and its associated hazards invites disaster.

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PLAN BEFORE PERFORMING DEVELOPMENT PROJECT

A recent accident at an AMC installation provides a vivid illustration of what may happen during a development project if adequate controls are omitted.

The supervisor assigned an engineering aide the task of drilling a 1/32-inch hole in the face of a loaded 105mm illuminant canister. The hole was to be about two inches deep, and a thermocouple was to be inserted in it to check the curing temperature. The drilling was to be done by hand with a drill that has an extension and a crossbar handle fabricated for this purpose.

The engineering aide found the hand drilling difficult because of excessive flexing of the fabricated tool. He proceeded to cut off the crossbar and use the drill in a drillpress. He removed a small area of first fire material and began the drilling into the illuminant filled canister. The high speed power-driven small drill was much faster than the hand powered drill had been.

When the planned two-inch hole was about one-half

drilled, there was a pop as from a small explosion. Spilled material was thrown into the man's face and eyes. The illuminant in the canister burned and set fire to the contents of other canisters on a nearby worktable. Soon the interior of the room and all its installed equipment were lost. The worker received a small forehead contusion and first degree burns to his forehead, nose, eyelids and hairline.

The experience caused a change in the way engineering development projects were implemented at the installation. The revised procedure required the preparation, in advance of performance of work, of procedures covering the location of the work, quantity of materials, safety equipment required, safety shields, work methods, waste disposal, and other factors indicated for the particular job. Work would not begin until the procedure had been reviewed by the Safety Office and approved by the Project Engineer.

* * * *

IMMERSION HEATERS DANGEROUS

Using one of those single cup, coil-type immersion electrical heaters was the cause of a near-accident in a Federal agency. The coil exploded, with the resulting shower of metal fragments narrowly missing the people in the room.

An employee was using the heater to make a cup of coffee, and when the water was hot, pulled the plug from the wall socket. Unfortunately, she disconnected an adding machine, rather than the heater. When she lifted the still-live heater from the cup shortly thereafter, the overheated coil exploded.

The trouble with the immersion heater is the lack of a thermostat--nothing to cut off the current if the device overheats. GSA regulations require that any privately owned electrical equipment in Government buildings must be reported by the occupying agency to the GSA manager. He will determine whether or not the device, or its use, is safe. Why not check out your office now?

SPEED IMPACT AND YOUR DRIVING

Speed never killed anyone. Test pilots regularly surpass the speed of sound, straining toward the speed of light.

But speeding is a handy way to make sure you have enough impact to kill yourself. That's why we have speed laws and speed limits.

Check any set of statistics. You'll come back to the same old story every time. The worst accidents happen where the fewest happen - out on the open road.

In city driving, you don't usually build enough momentum to provide the impact necessary to kill yourself. You can do it, but generally you don't.

Out on the open highway where hazards are fewer, the percentage of fatal accidents is invariable greater. Why? Because the higher speeds let more people turn themselves into human machine gun bullets.

Let's break this down in terms of cold statistics. It has been estimated that if you are going between 71 and 80 miles per hour and you have a collision, you have one chance in two of being killed. That is the impact from speed at work. The following chart shows your chance of being killed if you have a collision at various rates of speed:

Speed	Chance Of Being Killed
0 to 10	1 in 1,373.
11 to 20	1 in 963.
21 to 30	1 in 316.
31 to 40	1 in 97.
41 to 50	1 in 88.
51 to 60	1 in 31.
61 to 70	1 in 7.
71 to 80	1 in 2.
Over 80	1 in 1.

Speeding is like playing Russian roulette. You may miss having an accident for a long time. But when you do, that impact will get you.

- Safety Letter
U. S. Army Corps of Engineers
Louisville District

PROFILE OF THE BETTER DRIVER

Safety Division, DASO
U. S. Army Missile Command

How many of the following characteristics of the better drivers can you claim as your own? Drivers who are rated as better drivers possess the following characteristics:

- They give full attention to driving, don't fight the problem, are generally relaxed. By doing this they permit their inner reflexes and driving skills to take over and operate the vehicle.

- They don't crowd, rush to beat the light, jump lanes or squeeze the other guy.

- They observe well ahead of their driving for weather and other conditions over which they have no control.

- They maintain their vehicles in good repair.

- They maintain an attitude of self-confidence - Note that I said self confident - not over confident, but do not hesitate to display patience and courtesy to avoid an accident.

• NIGHT DRIVING: Better drivers have learned well that the accident odds are against them during night driving and have developed build-in attitudes to lower the odds in their favor.

- They never drive for long with a bug-smeared or dirty windshield.

- When the wiper blade becomes worn and streaks the windshield they replace it with a new blade.

- They do not drive for long with dirty headlights, as this further reduces night vision by 25 per cent.

- They are specially alert to distinguish

between advertising signs and traffic lights that can confuse driving judgment.

- They don't mentally fight the "non-dimmer" driver and glare from the approaching car. They simply hold their patience and watch the right shoulder of the road with their lights correctly dimmed.

- They never use parking lights when the car is in motion.

- They travel 10 miles per hour slower at night.

- They never wear any kind of colored glasses for night driving.

• TIPS FROM PROFESSIONAL: Professional drivers are the most skillful on the road, and generally they are truly classed as better drivers. Here's what they recommend to improve your driving:

- Sit up straight at the wheel - don't slouch.

- Fasten seat belt snugly.

- Check rear view mirrors to assure they are correctly set.

- Keep eyes moving ahead, behind, to the sides, preparing for distant problems that can become immediate ones.

- Leave yourself an "out" - space in adjoining lanes, front, rear, shoulder.

- Watch not only the car in front, but also the brake light of the car ahead of it, for that extra time in stopping.

- Learn to "see" potential accidents. Anticipate and adjust driving accordingly.

- Use your horn if you're not sure the other fellow sees you.

- Don't overdrive your physical ability.

- When stopped in traffic to make a left turn, keep wheels headed straight ahead. Otherwise should you get hit from the rear you may be knocked into the path of opposing traffic.

.....While these are not all the known techniques for better driving, they are essential to safe driving. If you will practice these every time you drive, you will increase your likelihood of accident-free driving.

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SAFETY QUESTIONS FOR SUPERVISORS

Safety Office
Sharpe Army Depot

Here are ten questions to which an efficient supervisor should be able to give an affirmative answer. If your answer to any question is "No", some changes are needed in your thinking and practices.

1. Is the personal safety of each employee important to me?

2. Are all accidents investigated and remedial measures suggested?

3. Is prompt first aid encouraged?

4. Is the use of personal protective clothing and equipment enforced?

5. Are safety suggestions welcomed?

6. Are regular safety inspections made in my department?

7. Does every new worker receive proper safety instructions?

8. Has a safety analysis of the jobs in my department been made?

9. Is everything possible being done to promote interest in safety?

10. Is my responsibility to management for safety being fulfilled?

COMPLACENCY INVITES ACCIDENTS

John H. Caldwell, Safety Inspector
Harvey Aluminum Sales, Inc.
Milan Army Ammunition Plant

The word "complacent" means to be pleased with one's self. Man constantly strives for this seemingly inaccessible goal of complete complacency. While a certain amount of self-satisfaction is necessary for our well-being, an excess creates problems. One of these problems produced by self-complacency is an increased likelihood of accidents.

Complacency takes many forms in its underlying role as a contributing cause of accidents. In most instances it can not be directly pin-pointed or proved, but nevertheless, it is there.

If you are complacent about your skill as a driver you may be in for a serious accident. The relaxed overconfident driver may be as great a hazard on the road as the tense, anxious vehicle operator.

Good drivers do not follow one car for a long period of time. If you do this you're apt to set up a "driver image". By complacently creating a "driver image" you assume the car you have been following as your image of a safe driver. If this car should make a mistake then you will probably make a similar mistake.

If a machine operator who has been doing the same job for some time becomes complacent, she might think she does not have to be constantly alert to every move she makes. If she is injured, the cause will more than likely be listed as inattention. The underlying cause actually was she did not think she had to be attentive, because she considered that her reflexes were trained for this particular job. She was too pleased with herself.

Self-complacency is a characteristic we all share in varying degrees. Therefore we should be alert to the hazards it can offer to each of us as an individual and to our work group. If we let it get out of hand, it may set us up for an accident.

Here are ten questions that will test your knowledge of safety requirements that you will need under different circumstances. The answers to all of them may be found in AMCR 385-224. How many can you answer without referring to the regulation? The correct answers and references appear on pages 43 and 44.

1. Would it be correct to say that small arms ammunition is not an explosives hazard?

   Answer and reference:

2. If a boiler house is to service two operating lines, how far must it be located from each of them?

   Answer and reference:

3. Is the quantity of explosive per unit a factor in determining how it shall be grouped for compatibility?

   Answer and reference:

4. Do Interstate Commerce Commission (Department of Transportation) safety regulations pertaining to safety apply to railroads within Army installations?

   Answer and reference:

5. Are there any restrictions on the use of gasoline-powered materials handling equipment to

transport explosives?

Answer and reference:

6. Can you name an operation where individuals should be required to wear sweatbands?

Answer and reference:

7. Is there an ammunition or explosive item that should not be stored in an earth-covered magazine? (Editor's Note: Separate storage requirements are prescribed for storage of fuels and oxidizers. These materials have been given explosives hazard classifications.)

Answer and reference:

8. What flow of water should mains be able to supply for fire fighting?

Answer and reference:

9. What is the relationship between storage compatibility groupings and quantity-distance requirements?

Answer and reference:

10. Where may you find the carrying capacity of the elevators at your installation?

Answer and reference:

PICATINNY ARSENAL AWARDS QUARTER-CENTURY SAFE DRIVERS

Safety Office
Picatinny Arsenal

☆☆ Under the Picatinny Arsenal Safe Driver Awards Program, numerous awards are made to individual drivers and driver teams for attaining accident-free driving records for designated periods. FY 1968 marked outstanding periods of safe driving under the program for Chief Michael Mayer and Sergeant James L. Doyle, of the Arsenal's Plant Protection Division. Each compiled a record of having driven Army vehicles for 25 years without an accident. On 19 September 1968, Colonel Roger Ray,

Commanding Officer of Picatinny Arsenal, presented engraved watches to Chief Mayer and Sergeant Doyle.

Since the inception of the Picatinny Arsenal Safe Driver Program, this top driver award has been presented to only two other drivers.

Segment supervisors also presented 235 individual awards of various items of merchandise recognizing the individual efforts comprising the 26 teams on the Arsenal who achieved safe driving records for periods ranging from one to 20 years.

★ The Arsenal Safe Driver Incentive Program recognizes both the individual and team efforts, with the primary objective of eliminating preventable motor vehicle accidents.

Here are the answers to the questions on pages 40 and 41. All questions were based on information contained in AMCR 385-224. A reference to the pertinent paragraph follows each answer.

- 1. Yes. Small arms ammunition is not an explosives hazard although under adverse conditions of storage it may become a fire hazard. Reference: Paragraph 1426.

- 2. A boiler house that serves more than one line constitutes a special area and shall be separated from other groups of buildings or areas by inhabited building distance. Reference: Paragraph 1711b.

- 3. The quantity of explosive per unit is one of several factors considered when explosives and ammunition are grouped for compatibility. Reference: Paragraph 1902.

- 4. The Interstate Commerce Commission (Department of Transportation) safety regulations that apply to transporting material between establishments should be followed for transportation within an installation. Reference: Paragraph 2102a.

- 5. Yes. The precautionary measures and devices described in paragraph 2402c, AMCR 385-224 must be used. Additional requirements are contained in paragraph 2404.

6. When operations involve such metallic powders as finely divided magnesium and aluminum, the operators should wear sweatbands and take other precautions when necessary to prevent perspiration from falling on the material. These powders may be ignited by moisture. Reference: Paragraph 1010.

7. Earth-covered magazines are preferred and may be used for the storage of all items of ammunition and explosives. Reference: Paragraph 1802.

8. Mains shall be large enough to supply a flow of water for fire fighting of at least 2,000 gallons per minute at adequate pressure (40 PSI minimum). Reference: Paragraph 1226a.

9. Storage compatibility groupings should not be confused with the hazard classification established for quantity-distance requirements. Reference: Paragraph 1903 and section 17.

10. The elevator carrying capacity is required to be posted at the entrance to the elevator and inside it. Reference: Paragraph 906.

Editors note:

An article "Fire Prevention" in the November 1968 edition of the Safety Digest discussed the need for fire extinguishers in your home, boat and car. Paragraph 3-7d, AR 420-90, contains Army policy regarding fire extinguishers for on-post housing.

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